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tibus cardinalibus parviusculis, compressis crenulatisque; lateralibus sublongis lamellatisque; margarita argentea et valde iridescente.

Hab.—Rio Gigillillo, Corcuera, Nicaragua, Cen. Am., Mr. J. A. McNeil.

GONIOPHYSIS BACULOIDES.—Testa lævi, cylindræa, subtenui, luteola, quadrivittata; spira valde elevata; suturis irregulariter impressis; anfractibus planulatis; apertura parva, rhomboidea, intus vittata et cæruleo-alba; labro acuto, vix sinuoso; columella vix incrassata, contorta.

Hab.—Coosa River, Alab., Dr. Schowalter.

GONIOPHYSIS LAWRENCII.—Testa lævi, subcylindræa, subcrassa, tenebroso-cornea, dilute vittata vel evittata; spira elevata; suturis impressis; anfractibus planulatis; apertura parviuscula, rhomboidea, intus albida; labro acuto, sigmoideo; columella incrassata et contorta.

Hab.—Washita River, near Hot Springs, Arkansas, Dr. Lawrence.

SCHIZOSTOMA LEWISII.—Testa crebrissima striata, subcylindræa, subtenui, luteo-fusca, imperforata; spira conica, plicata; suturis valde impressis; anfractibus instar septenis, ultimo grandi; fissura obliqua brevique; apertura grandi, rhomboidea, intus vittata; labro crenulato, sinuoso; columella alba, incrassata et contorta.

Hab.—Coosa River, Alab., Dr. Schowalter.

PHYSA CARLTONII.—Testa lævi, obtuse fusiformi, inflata, valde polita, tenui, subpurpurea; spira exserta, acuminata; suturis impressis; anfractibus senis, ultimo pergrandi; apertura ovata, grandi; labro expanso, intus marginato; columella impressa et contorta.

Hab.—Mount Diablo, California, W. G. W. Harford.

PHYSA WOLFIANA.—Testa subrotunda, valde inflata, polita, tenui, tenebroso-cornea; spira valde obtusa; suturis impressis; anfractibus quaternis, ultimo pergrandi; apertura ovata, grandi; labro expanso; columella medio parum impressa et parum contorta.

Hab.—Hot Springs, Colorado Ter., Prof. J. W. Powell.

Notices of certain obscurely known species of American BIRDS.

(Based on specimens in the Museum of the Smithsonian Institution).

BY ROBERT RIDGWAY.

INTRODUCTORY REMARKS.

The following notes comprise the result of some examinations in the extensive series of North American birds in the Museum of the Smithsonian Institution, to which I was kindly allowed access by Professor Henry. They were made especially in connection with the determination of collections gathered by myself as Zoologist to the U. S. Geological Survey of the 40th Parallel, under Mr. Clarence King, principally in California, Nevada and Utah.

Crossing so wide an extent of country as that indicated, it so happened that the operations of the party allowed of extensive examination of the region along the lines of junction of the three great "Provinces" of Professor Baird's paper on the migration and distribution of North American birds, and I had frequent occasion to confirm, and in some cases to extend his remarks relative to the affinities of the species of the different regions, and especially to their hybridization, and to learn to what extent this may take place, and therein tend to perplex the naturalist in his endeavors to determine the exact character of his collections. When to this is added the change which confessedly the same species undergoes under different climates, elevation, and geographical distribution, it is no wonder that many cases exist in which even our best critics may reasonably confess themselves at fault as to the precise name of the specimen, especially in view of the fact that many of them 1869.]

are hastily prepared by persons of little skill in such matters, and are more or less deteriorated by packing and transportation.

The first question upon which we propose to treat is the line to be drawn distinguishing "species" from "varieties." I do not, however, intend to discuss at any length this difficult and perplexing point, but only as it touches more directly upon the birds to be noticed, and in the case of several of them it may possibly well be left (as the matter now stands) entirely to one's discrimination, whether he is to regard them as valid "species" or subordinate "varieties."

Now we must and do admit a certain extent of variation, influenced by different agencies, as age, season, and locality, when the cause of such variations can be thus satisfactorily explained. It does not follow, however, that, because we have a series connecting by a gradual transition two extremes, we are to consider the whole as one species, the discrepancies indicating different varieties. The difference between these extreme examples is often too great to admit of this; and when we have traced a species through all its variations to a certain point where the discrepancy from the typical style is too great and uniform to be accounted for by any physical cause, it becomes us as naturalists to assign to such extreme conditions a specific rank. What more can we do? and what is more in accordance with the laws of nature? Therefore we cannot do better than to accept as valid these representative forms, when they can be assigned distinctive habitats; and where they are substantiated by a sufficiency of specimens, to such we may allow a reasonable extent of variation, not, however, beyond the limit controlled by physical causes.

We find that in all cases where individuals occur which apparently connect the approaching extremes of two well defined representative forms, that such are almost always from localities inhabited by each, or from the region where their respective habitats overlap. It is under such circumstances that we must admit *hybridization* among birds, and abundant evidence can be adduced that such hybridization does occur between congeneric species, and that it is not only occasional but general; indeed an instance will hardly be found where, by collecting in the region where an eastern species and its western representative are found together, the collector will not obtain hybrid specimens. Such has been the case with myself respecting several species, as well as with nearly all others who have made ornithological collections in the West.

What more conclusive evidence of hybridization need we have than an examination of the numerous examples of such a condition of *Colaptes* from the upper Missouri region, where the ranges of eastern *C. auratus* and western *C. mexicanus* adjoin. In this instance we have specimens showing as gradual transition between the two extremes as in any other instance where hybridization is usually less evident, because the species are more obscurely colored and the pattern less sharply defined. If we are to consider the *C. auratus* as one extreme of a single species, the *C. mexicanus*, its representative of the opposite side of the continent, the other, *Colaptes chrysoides*, another "sport," and the hybrid specimens from intervening ground the connecting links, all merely variations accruing from changes that might be wrought by longitudinal distribution, etc., we may as well give up the idea of species in birds, and in fact their study in detail entirely.

Besides the case of *Colaptes* we have other abundant proof of hybridization in specimens which combine the character of an eastern species and its western representative, or two closely allied species, or even two of different genera. Of this category I may mention the following couplets, which are represented in individuals in the Smithsonian collection: *Picus villosus* and *P. harrisii* — *P. pubescens* and *P. gairdneri* — *Sphyrapicus ruber* and *S. nuchalis* — *Chrysomitris mexicana* and *C. psaltria* — *Zonotrichia leucophrys* and *Z. gambelli* — *Junco oregonus* and *J. caniceps* — *J. oregonus* and *J. hyemalis* — *Pipilo erythrophthalmus* and *P. arcticus* — *Agelaius phoeniceus* and *A. gubernator* — Stur-

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nella magna and *S. neglecta* — *Cyanura stelleri* and *C. macrolopha* — *Cyanocitta californica* and *C. woodhousei* — *Anser gambelii* and *Bernicla hutchinsii*, and many others which I need not here mention—all, I may again say, from the regions where the habitats of the two representative species overlap.

Premising these general considerations I proceed to discuss in detail some closely allied species to which my attention has been specially called in the course of the investigations referred to.

1. *The North American Wood Thrushes.*

Genus HYLOCICHLA, Baird.

Some authors seem inclined to doubt the validity of several species of this group, as characterized by Professor Baird. These are the *H. alicie*, Baird, *H. ustulatus*, Nutt., *H. nanus*, Audubon, and *H. audubonii*, Baird, these being referred to *swainsonii*, Cabanis, *fuscescens*, Stephens, and *pallasi*, Cabanis. A careful examination of the very extensive series of these birds in the Smithsonian collection has, however, convinced me that they are all (with perhaps the exception of *audubonii*) justly to be regarded as distinct species.

I do not propose to speak here at any length in regard to the characters of these species, as they have been well presented by Professor Baird, in his work on the "Birds of North America," and in his later "Review of American Birds," but intend merely to give a few additional features which the species constantly present in distinction from one another. The more important synonyms only are given.

The species I arrange according to the following synopsis:

- A. Upper surface much brightest anteriorly, the rufous of the crown being decidedly more intense than the olive of the posterior portions; white beneath continuous; spots large, sharply defined, pure black, and extending far back.

This style is represented by a single species, the well known *T. musletinus*, Gm., which needs no comparison with any other.

- B. Olive of back uniform from head to tail, but varying in shade.

T. fuscescens, *T. ustulatus*, *T. swainsoni* and *T. alicie* are of this pattern.

- C. Olive of the back passing very sensibly, or even abruptly, into reddish on upper tail coverts and tail.

The species representing this style are the *T. pallasi*, *T. audubonii* and *T. nanus*.

TURDUS FUSCESCENS.

Turdus fuscescens, Stephens, Shaw's Gen. Zool. Birds, X, i, 1817, 182—Baird, Birds N. Am. 1858, 214.—*Turdus (Hylocichla) fuscescens*, Baird, Rev. Am. Birds, I, 1864, 17.

Sp. ch. Above tawny rufescent olive, uniform on all parts, but occasionally with a tendency to a greater intensity on dorsal region. Pectoral aspect peculiar; throat with a series of faint brown dashes on each side, these continuing down sides of neck and extending very sparsely across the breast, where they become more sharply defined; the region of these markings with a fine cream colored tinge, quite different from the buff of *ustulatus* and *swainsonii*. Like the *T. alicie*, this species lacks entirely the yellowish or lighter orbital ring.

TURDUS USTULATUS.

Turdus ustulatus, Nuttall, Man. I, 1840, 400—Baird, Birds N. Am. 1858, 275, pl. lxxvi, fig. 1.—*Turdus (Hylocichla) ustulatus*, Baird, Rev. Am. Birds, I, 1864, 18.

Sp. ch. General appearance of *fuscescens*, but with pattern of *swainsonii*, the buff orbital ring as conspicuous as in latter. The olive above is more brown than in this, and less yellowish than in *fuscescens*, becoming decidedly more 1869.]

rufescent on wings and less observably so on tail. Pectoral aspect different from *fuscescens*, the spots narrow and cuneate, sharply defined, and arranged in longitudinal series; in color they are a little darker than the crown.

This well marked and perfectly distinct species is to be compared with *swainsonii*, not with *fuscescens*, as has generally been done; the latter, except in shade of colors, it scarcely resembles at all; still greater evidence that such is its affinity is that the *T. ustulatus* builds its nest on a tree, and lays a spotted egg, like *swainsonii*, while *fuscescens* nests on or near the ground, perhaps never in a tree, and lays a plain blue egg.

TURDUS SWAINSONII.

Turdus swainsonii, Cabanis, Tschudi, Fauna Peruana, 1844, 46, 188—Baird, Birds N. Am. 1858, 216.—*Turdus (Hylocichla) swainsonii*, Baird, Rev. Am. Birds, i, 1864, 19.

Sp. ch. Olive above dark and pure, of a continuous shade throughout; in extreme western examples, with a clear dark greenish tint. A very broad, conspicuous ring of buff around the eye, running forward over the lore, and a very decided tinge of the same on breast. Pectoral spots well defined, deltoid, becoming more transverse posteriorly, dull black.

Specimens examined from the northern regions (Gt. Slave Lake, Mackenzie's River and Yukon) to Guatemala; from Atlantic States to East Humboldt Mts., Nevada, California, and from intervening localities. The extremes of variation are the brownish olive of eastern and clear dark greenish olive of remote western specimens. There is no observable difference between a Guatemalan skin and one from Ft. Bridger, Utah.

TURDUS ALICIE.

Turdus alicie, Baird, Birds N. Am. 1858, 217, pl. 81, fig. 2—Coues, Pr. Ac. Nat. Sciences, Phil. Aug. 1861, 217.—*Turdus (Hylocichla) alicie*, Baird, Rev. Am. Birds, I, 1864, 21.

Sp. ch. The olive above, similar to that of *swainsonii*, is scarcely more greenish, but is generally decidedly darker, and often with the slightest possible tinge of rich sepia or snuff brown, this becoming gradually more appreciable toward the tail; in these typical examples this tint is quite peculiar; when the shade approaches that of *swainsonii* it is generally when there are other unmistakable evidences of hybridism. There is in this species not a trace of a lighter loreal stripe and orbital ring, so characteristic of *swainsonii*, this whole region being grayish, scarcely different from the cheek; with the exception of the lack of decided buffy tinge, the pectoral aspect is that of *swainsonii*.

A specimen from Costa Rica is undistinguishable from typical examples from the eastern U. S.

This bird and the robin are the only species of our thrushes that cross the Arctic circle to any distance, or reach the shore of the Arctic Ocean. It occurs in from Labrador, all round the American coast, to the Aleutian Islands, everywhere bearing its specific character as indicated above. It is extremely abundant on and near the Arctic coast, between the mouth of the Mackenzie's River and the Coppermine, more than 200 specimens (mostly with their eggs) having been sent thence to the Smithsonian Institution by Mr. MacFarlane. In all this number there was not a single bird that had any approach to the characters of *T. swainsonii*, as just given. From the Slave Lake region, on the other hand, *T. swainsonii* was received in nearly the same abundance, and unmixed during the breeding season with *T. alicie*.

TURDUS PALLASI.

Turdus pallasi, Cabanis, Wieg. Arch. 1847, i, 205—Baird, Birds N. Am. 1858, 212.—*Turdus (Hylocichla) pallasi*, Baird, Rev. Am. Birds, I, 1864, 14.

Sp. ch. Olive above almost exactly that of *ustulatus*. Rufous of the tail, upper tail coverts and lower part of rump, uniform. Olivaceous of neck continuing along sides; spots on breast sharply defined, and nearly pure black.

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TURDUS NANUS.

Turdus nanus, Audubon, Orn. Biog. V, 1839, 201—Baird, Birds N. Am. 1858, 213.—*Turdus (Hylocichla) nanus*, Baird, Rev. Am. Birds, I, 1864, 15.

Sp. ch. Above with the clear dark olive of *swainsonii*, but this even purer and more plumbeous. Upper tail coverts (but not lower part of rump) becoming more rufous, the tail abruptly darker, richer and more *purplish* rufous, approaching to chestnut. The clear olive of the neck passes into brownish *plumbeous* along sides; pectoral spots more sparse and less pure black than in *pallasi*. The white beneath is of an almost snowy purity, appreciably different from the cottony white of *pallasi*. A very tangible and constant character possessed by this perfectly distinct species is the more slender and depressed bill, as compared with that of *pallasi*. Specimens vary only in intensity of colors; these variations very limited, and corresponding with those of *pallasi*. In all cases, however, their precise pattern and peculiar distribution is retained.

TURDUS AUDUBONII.

Turdus (Hylocichla) audubonii, Baird, Rev. Am. Birds, I, 1864, 16.

Sp. Ch.—Relative proportions of *nanus*, but much larger even than *pallasi*, the bill much more elongate and slender. Plumage similar to that of *pallasi* but lighter and more grayish; the rufous posteriorly more restricted and more yellowish even than in *pallasi*; pectoral spots larger and more sparse than in *pallasi*, clove brown instead of nearly black, breast and neck almost entirely destitute of any yellowish tinge. This species, the validity of which may by some be questioned, differs principally from *pallasi* in being much larger and more slender, with the arrangement of colors as in *nanus*, although the shades are more as in *pallasi*.

In regard to the above mentioned thrushes, the discussion as to whether they be all descended from as many primitive creations, whether there be three species with several varieties each, or finally whether all be merely modifications of one original type, would involve the opening of the whole question of the origin of species, and what constitutes genera and species and need not be prosecuted here. Whether one naturalist calls them species, and another races or varieties, so much is, I consider, well established—that there are seven forms of N. American thrushes requiring names, all of definable characters, and all having a well marked region of distribution. Also, that these forms are permanent over a large area, but that as in many other instances where the areas of two overlap, we have suddenly intermediate or hybrid birds that are with difficulty to be referred to either; and that these intermediate birds mixing with the others in their migrations tend to obscure the series; but that, as a general rule, specimens taken in the breeding season are distributed geographically and colored, as stated above.

2. On the uniformly red species of *Pyrranga*, with descriptions of a new N. American species or variety.

In treating of the species of this form of the genus *Pyrranga*, I have endeavored to be as conservative as possible in my conclusions, and have, after careful consideration of the species, represented in all their various conditions by the immense series of specimens before me, made due allowance for the variations which may accrue from natural causes, as difference of habitat, &c., and in designating the species, have allowed to each the widest possible limit, including all varieties as subordinate.

Of the present group we find two styles, one with the *Pyrranga æstiva*, Vieillot, as type, characterized by large light colored bill, without conspicuous tooth on commissure, and with no marked contrast between tints of upper and lower surface. This group contains, besides the *P. æstiva*, the *P. saira*, Sclater, and *P. cooperi*. The other, with the *Pyrranga hepatica*, Swainson, as type, is distinguished by plumbeous-black bill with prominent commissural tooth, and the

upper surface of body being quite different in tint from the lower. The species, besides the type, which belong to this group, are the *P. testacea*, Sclater, and Salvin, and *P. azaræ*.

Of all the species the *æstiva* has the widest range of habitat, this including the "Eastern Province" of the United States, Eastern Mexico, Central America, and the northern part of South America. In Western Mexico, and the southern "Middle Province" of the United States, the *æstiva* is replaced by the closely allied *P. cooperi*. The *P. hepatica* belongs to the mountain regions of Mexico, extending along the elevated lands into the southern Rocky Mountains of the United States; allied to this are the *P. testacea* of Central America, and *P. azaræ* of south-eastern South America. The South American representative of the *P. æstiva*, is the *P. saira*, of Brazil.

PYRANGA ÆSTIVA, Vieillot.

Tanagra æstiva, Gmelin, Syst. Nat. I, 1788, 889.—*Pyranga æstiva*, Baird, B. N. A. 1858, 301.—Aud., Birds Amer. II, pl. 209.



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Sp. Ch.—Length 7·25, extent 12·00, wing 3·81, tail 2·96, culmen ·70, tarsus ·68. Bill dilute, horn color, darker towards culmen, paler along commissure. Prevailing tint pure vermillion, the whole upper surface more dusky purplish red, uniform from bill

to tail, perhaps a little more reddish on upper tail-coverts and lower part of rump. Exposed tips of primaries, and inner webs of upper secondaries pure umber-brown.

Female—Yellowish olivaceous, purer dull yellow beneath; above more olive greenish.

This species is one of wide distribution, its habitat in the United States, including the "Eastern Province," is north to Nova Scotia, and west toward the Rocky Mountains, along the streams watering the plains, through Texas, into Eastern Mexico, Central America, the northern part of South America, as well as some of the West India islands.

In the different regions of its habitat the species undergoes considerable variations as regards shades of color, and proportions. Specimens from Texas and Eastern Mexico exhibit a decided tendency to longer bills and more slender forms than those of the eastern United States; the tails longer and colors rather purer. In Central America and New Grenada the species acquires the greatest perfection in the intensity and purity of the red tints, all specimens being in this respect noticeably different from those of any other region.*

Specimens from Peru (39849♂, 39849♂, and 39850♀, head-waters Huallaga River,) are undistinguishable from specimens from the eastern United States.

PYRANGA COOPERI, Ridgway, n. s.

Sp. ch. Length 8·60, extent 13·50, wing 4·24, tail 3·68, culmen ·84, tarsus



34344

·80.† Generally rich pure vermillion, similar to that of *æstiva*, but brighter than in eastern examples of this, and less rosaceous than in Central American specimens. Upper surface scarcely darker than lower, the head above being scarcely different from the throat, and

abruptly lighter than the back, which, with the wings and tail, is of a much

* Of this highly colored form, the average length of five specimens is 7·55; of twelve the wing is 3·67, tail 2·86, culmen ·67. Thus the size is seen to be slightly smaller than the *æstiva* of the north. The bills also appear to be a little darker, but there are no other differences.

† The mean of six specimens is somewhat less—wing 4·00, tail 3·58, culmen ·82.

lighter dusky red than in *æstiva*; exposed tips of primaries pure slaty umber, primaries faintly margined terminally with paler, (in the type, this character is not apparent, owing to the feathers being somewhat worn; in other specimens, however, it is quite a noticeable feature, although possibly not to be entirely relied on.

Female.—Above orange olivaceous, beneath more yellowish, purest medially; crissum richer yellow than other lower parts, being in many individuals intense indian-yellow, with the inner webs of the tail feathers margined with the same; quite distinct line of orange yellow over the lores.

Habitat.—Southern "Middle Province" of U. S., south of 35th parallel, and between 104th and 106th meridians. Pacific slope of Mexico.

This species, or at least very well marked race, which I dedicate to Dr. J. G. Cooper, so well known for his researches in the Natural History of Western North America, appears to be well established, and quite distinct from *æstiva*, to which it is most nearly related. From this it may readily be distinguished, however, by larger size, (length 8·60, instead of 7·25; wing 4·24 instead of 3·81, etc.), the bill especially being much larger, (·84 instead of ·70), as well as more swollen; the wing is more pointed, the primaries extending 1·16 beyond the secondaries, instead of about ·84, as in *æstiva*. The third quill is generally longest, but in some specimens the second and third are equal; in *æstiva* the second is usually longest.

The most perfect representatives of this species are three specimens obtained within the limits of the United States; these are a pair (Nos. 34344♂, and 34345♀, Los Pinos, New Mexico), collected by Dr. Coues, and an immature male, collected by Dr. Cooper, at Ft. Mohave, on the Colorado River. These specimens have, owing to their peculiar habitat, a faded, or worn plumage, somewhat different from the perfect stage represented in specimens from Western Mexico, but differing from the typical style only in a bleached or faded appearance, more or less characteristic of all birds of the southern portion of the Great Basin.

PYRANGA SAIRA, Spix.

Tanagra saira, Spix, Av. Bras. II, pl. 48, f. 1.—*Pyranga saira*, Sclater, Catal. Am. Birds, 80.—*Pyranga mississippiensis*, Lafr., and D'Orb.—*P. coccinea*, Burmeister.

Sp. ch. Wing 4·12, tail 3·52, culmen ·81, tarsus ·72; 2d and 3d quills longest, 1st intermediate between 3d and 4th. Bill shaped much as in *Cooperi*; the upper aspect is almost precisely the same in the present bird, being, however, rather broader at the base; the lateral aspect is, however, quite different in the two; the present species having the culmen less regularly arched, the terminal curve being more abrupt, the lower mandible is decidedly inferior in depth to the upper. There is quite a decided indication of a tooth about the middle of the commissure. In this species the color of the bill is much darker than in either of the other species of the group, in this respect approaching more nearly the *hepatica* style; the upper mandible being dark sepia, the lower much paler and more bluish.



Above rich dark purplish red, almost exactly as in *æstiva*, but becoming bright scarlet on the forehead, this continuing back over the eye in a quite conspicuous superciliary stripe. Lower parts rich fine scarlet, very pure and clear, somewhat tinged with brownish laterally.

Female.—The graduation of the tints exactly as in the male, the scarlet of which is replaced by gamboge yellow, the dusky red by golden greenish olivaceous. The superciliary stripe is in both sexes a conspicuous feature.

1869.]

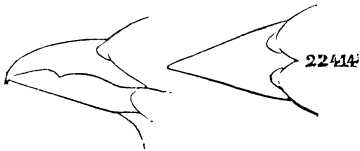
Hab.—Brazil. (Type 50994♂, and 50995♀. Brazil, Sr. Don Fred. Albuquerque.

This species, although belonging to the *æstiva* style, is nevertheless a well marked one, and one for the identification of which a comparison with the others is scarcely necessary. In uniformity of colors, as well as in general style of color, it much resembles *æstiva*; the superciliary stripe, however, at once distinguishes it from this. The red of this species is also very different from that of any other, being purer and richer, approaching in fineness and tint that of *Pyranga rubra*.

PYRANGA HEPATICA, Swainson.

Pyranga hepatica, Swainson, Phil. Mag. I, 1827, 438—Baird, B. N. A. 1858, 302.—*Pyranga dentata*, Licht.—*P. azaræ*, Woodhouse, Sitgreave's Report.

Sp. ch. "Length 8·00," wing 4·12, tail 3·36, culmen ·68, tarsus ·84. Second quill longest, first intermediate between fourth and fifth. Bill somewhat



shorter than that of *æstiva*, but broader and higher at the base, becoming compressed toward the end; a distinct prominent tooth on commissure. Color plumbeous-black, paler, or more *bluish* plumbeous on lower mandible. Head above brownish red, purer anteriorly; rest of up-

per parts and sides brownish ashy, tinged with reddish; edges of primaries, upper tail-coverts and tail, more reddish. Beneath, medially, fine light scarlet, most intense on the throat, growing gradually paler posteriorly. Lores and orbital region grayish white; eyelids pale-red; ear-coverts ashy red.

Female.—Above ashy greenish olivaceous, brightest on forehead; edges of wing feathers, upper tail-coverts and tail, more ashy on the back; beneath nearly uniform olivaceous yellow, purer medially; lores ashy; a superciliary stripe of olivaceous yellow. Young male similar to the female, but forehead and crown olivaceous-orange, brightest anteriorly; superciliary stripe bright orange, whole throat, abdomen and breast medially rich yellow, most intense and tinged with orange-chrome on throat.

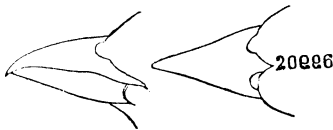
Hab.—Mountain regions of Mexico and Southern Rocky Mountains of U.S.

This species differs from all the others in the great restriction of the red; this being confined to the head above, and median lower surface, the lateral and upper parts being quite different reddish-ashy. The *shade* of red is also peculiar, this being very fine and light, of a red-lead cast, and most intense anteriorly.

PYRANGA AZARÆ, D'Orb.

Pyranga azaræ, D'Orb., Voyage, 264.

Sp. ch. Wing 3·60, tail 3·32, culmen ·64, tarsus 80. Bill smaller than in *hepatica*, and narrower; commissural tooth obsolete or, in fact, not observable; color blackish plumbeous, as in *hepatica*. Second quill longest: first scarcely shorter than third.



General tint below dull light vermilion, less clear than in *hepatica* and less

restricted, the sides being scarcely obscured by grayish; the shade is also continuous, the crissum being as intense as the throat. Above dull purplish brown, more reddish on edges of primaries and tail feathers; head above strongly tinged with red; lores and eyelids well defined dull white; ear coverts dull red. (Plumage of female unknown.)

This species, of which there is but one specimen in the collection, is most nearly related to *hepatica*; it differs from this, however, in smaller bill, with-

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out teeth; less ashy color above, and less restriction of the red below, the whiter lores and more reddish cheeks.

Hab.—Paraguay. Type 20996, ♂. Expl. Parana, Capt. T. J. Page, U. S. N.

I do not feel entirely sure that this bird is the species of D'Orbigny, nor that it may not be undescribed. I present it, however, under the above name for further consideration.

PYRANGA TESTACEA, Sclater and Salvin.

Pyrranga testacea, Sclater and Salvin, Pr. Z. S. 1868, 388, Veragua.

Sp. ch. Wing 3·48, tail 3·12, culmen ·76, tarsus ·80. Bill very large and much swollen; very broad at base, becoming quickly compressed toward tip; tooth on commissure very prominent and conspicuous. Upper mandible nearly pure black, lower more plumbeous. Color generally very dark testaceous red, becoming gradually purer brownish scarlet medially beneath; lores, suborbital space and extreme border of chin grayish.

Female.—Olivaceous green above, and deep olivaceous orange anteriorly beneath, the gradation of the tints exactly as in the male.

Hab.—Veragua, Costa Rica (Angostura), Rio Manati and Belize.

Described from a type specimen presented to the Smithsonian Institution by Mr. Salvin.



3. The Smaller Quiscali of the United States.

In making an examination of a very large series of the smaller Grakles of the United States, I was struck by a radical difference in form and color between specimens from the Atlantic and interior States, which I find to be sufficiently constant to warrant the separation into two distinct varieties if not species.

Professor Baird refers to this difference in his work on the Birds of N. Am. (see p. 556), and mentions its constancy, which I have been able to confirm.

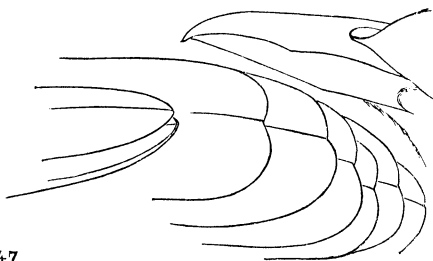
The following diagnoses are intended to express the distinctions referred to:

QUISCALUS PURPUREUS, Bartram.

Gracula quiscal, Linn., Syst. Nat. ed. 10. I, 1758, 109 (*Monedula purpurea*, Cat.)—Wils. Am. Orn. III, 1811, 44, pl. 21, f. 4. *Gracula purpurea*, Bartram, Travels Florida, 1791, 290. *Quiscalus purpureus*, Cassin, Pr. A. N. S. 1866, 403. *Quiscalus versicolor*, Vieillot, Nouv. Dict. 28, 1819, 488—Baird, B. N. A. 555.

Fig. 1.

Sp. ch. Length about 12·50, wing 5·50, tail 4·92, culmen 1·24, tarsus 1·28. Second quill longest, hardly perceptibly (only ·07 of an inch) longer than the first and third, which are equal; projection of primaries beyond secondaries 1·56; graduation of tail ·92. General appearance glossy black; whole plumage, however, brightly glossed with reddish violet, bronzed purple, steel blue and green; the head and neck with purple prevailing, this being in some individuals more blueish, in others more reddish; where most blue this is



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purest *anteriorly*, becoming more violet on the neck. On other portions of the body the blue and violet forming an iridescent zone on each feather, the blue first, the violet terminal; sometimes the head is similarly marked. On the abdomen the blue generally predominating, on the rump the violet; wings and tail black, with violet reflection, more blueish on the latter; the wing coverts frequently tipped with steel blue or violet. Bill, tarsi and toes pure black; iris sulphur yellow.

Hab. Atlantic and Gulf? States, north to Nova Scotia, west to the Alleghanies.

This species is more liable to variation than any other; the arrangement of the metallic tints varies with the individual; there is never, however, an approach to the sharp definition and symmetrical pattern of coloration characteristic of the western species. One specimen (No. 31049, Washington, D. C.) is wonderfully similar, in the darkness and distribution of tints, to the *Q. aglæus*, Bd., but resembles this in these respects only.

Wilson's figure conveys a good idea of this species; Audubon represents the western style, although his description is of the eastern.

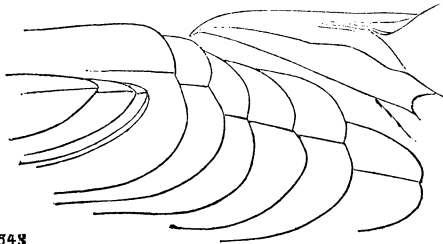
The exact name of this species is a matter of some question. It is undoubtedly the *Gracula quiscula* of Linnæus, as based on the purple jackdaw of Catesby, which, although generally considered as the same with the common crow blackbird of the northern States, is more like *major*. The *Gracula purpurea* of Bartram from Florida, again, though excluding *major*, may include *aglæus*. *Q. versicolor*, of Vieillot, embraces various West Indian species, though essentially belonging to the crow blackbird. On the whole, for the present, at least, I will follow Mr. Cassin in retaining Bartram's name of *purpureus*.

QUISCALUS ÆNEUS, Ridgway.

Quiscalus versicolor, Aud., Orn. Biog. pl. vii; Birds Amer. iv, pl. 221, (figure but not description).

Fig. 2.

Sp. ch. Length 12.50 to 13.50, wing 6.00, tail 6.00, culmen 1.26, tarsus 1.32. Third and fourth quills longest and equal; first shorter than fifth; projection of primaries beyond secondaries 1.28; gradation of tail 1.48.



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defined behind, varying in shade from an intense Prussian blue to brassy greenish, the latter tint always, when present, most apparent on the neck, the head always more violaceous; lores velvety black. Entire body, above and below, uniform continuous metallic brassy olive, varying to burnished golden olivaceous bronze, becoming gradually uniform metallic purplish or reddish violet on wings and tail, the last most purplish; primaries violet black; bill, tarsi and toes pure black; iris sulphur yellow.

Habitat.—Mississippi region of U. S., east to Alleghany Mts., west to Ft. Bridger; Saskatchewan Country, Hudson's Bay Territory, Labrador and Maine (52382, Calais, Me. G. A. Boardman).

This species may be readily distinguished from the preceding by the color alone, independently of the differences of proportions.

The impression received from a casual notice of a specimen of the *Q. purpureus* is that of a uniformly glossy black bird, the metallic tints being much broken or irregularly distributed, being frequently or generally arranged in

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successive bands on the feathers over the whole body, producing a peculiar iridescent effect. In the *Q. æneus* nothing of this character is seen; for, among a large series of western specimens, not one has the body other than continuous bronze, the head and neck alone being green or blue, and this sharply and abruptly defined against the very different tint of the other portions. These colors of course have there extremes of variation, but the change is only in the shade of the metallic tints, the precise pattern being strictly retained. In the present species the colors are more vivid and silky than in the eastern, and the bird is in fact a much handsomer one.

QUISCALUS AGLÆUS, Baird.

Quiscalus baritus, Baird, B. N. A. 1838, 556, pl. 32, not of Lesson.—*Quiscalus aglæus*, Baird, Am. Jour. 1866, 84—Cassin, Pr. A. N. S. 1866, 404.

Fig. 3.

Sp. ch—Length 11·00, wing 5·20, tail 5·12, culmen 1·24, tarsus 1·23. Second and third quills equal and longest; first shorter than fourth; projection of primaries beyond secondaries 1·12; graduation of tail 1·00.

Bill very slender and elongated, the tip of upper mandible abruptly decurved; commissure very regular.

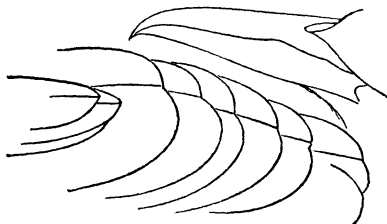
Metallic tints very dark. Head and neck all round well defined violaceous steel blue, the head most blueish; body soft dull bronzy greenish black, scarcely lustrous; wings, upper tail coverts and tail blackish steel blue, the wing coverts tipped with vivid violet bronze; belly and crissum glossed with blue.

Hab.—South Florida.

This species is quite well marked, differing from the two preceding in much smaller size, with more slender and more decurved bill.

The arrangement of the colors is much as in the larger western species, while the tints are most like those of the eastern. All the colors are, however, darker, but at the same time softer than in either of the others.

In form this species approaches nearest the western, agreeing with it in the primaries, slender bill, and more graduated tail, and, indeed, its relations, in every respect, appear to be with this rather than the eastern.



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July 6th.

The President, DR. HAYS, in the Chair.

Ten members present.

July 13th.

DR. BRIDGES in the Chair.

Twelve members present.

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